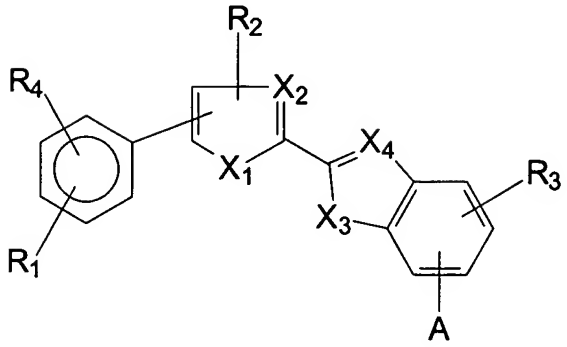
IN THE CLAIMS:

1. (Original) A compound according to Formula I:



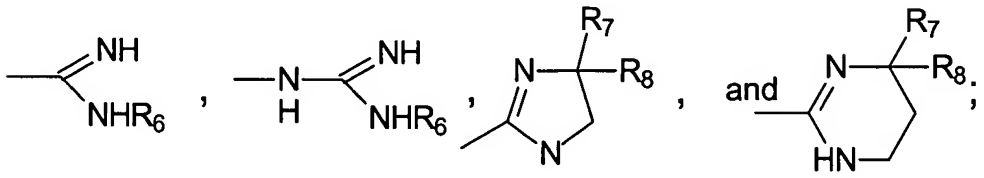
(I)

wherein:

X_1 and X_3 are each independently selected from the group consisting of O, S and NR_9, wherein R_9 is H or alkyl;

X_2 and X_4 are each independently CH or N;

A is selected from the group consisting of H, alkyl, aryl,



R_1, R_2, R_3, R_4 and R_5 are each independently selected from the group consisting of H, alkyl, alkoxy, halide, alkylhalide, amidine, nitro and amino groups;

R_6 is H, alkyl or aryl; and

R_7 and R_8 are each independently selected from the group consisting of H and alkyl.

2. (Original) The compound according to Claim 1, wherein:

X_1 is O;

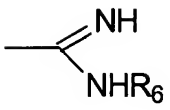
X_2 is C;

X_3 is NH

X_4 is N and

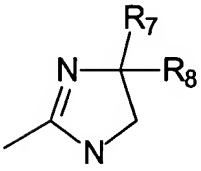
R_2, R_3 and R_4 are each H.

3. (Original) The compound according to Claim 1, wherein A is



and R_6 is alkyl.

4. (Original) The compound according to Claim 1, wherein A is

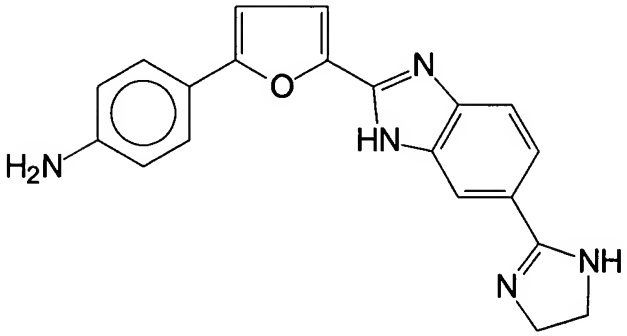


and R_7 and R_8 are each H.

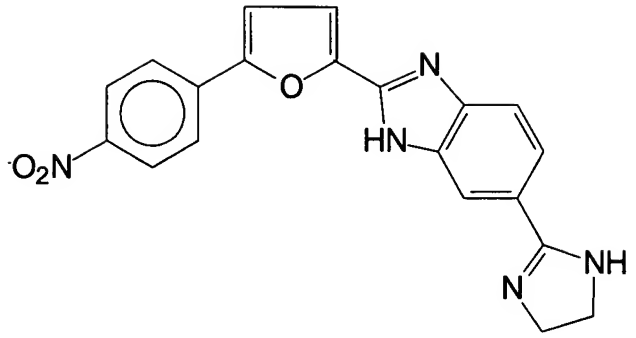
5. (Original) The compound according to Claim 1, wherein R_1 is an amino group.

6. (Original) The compound according to Claim 1, wherein R_1 is a nitro group.

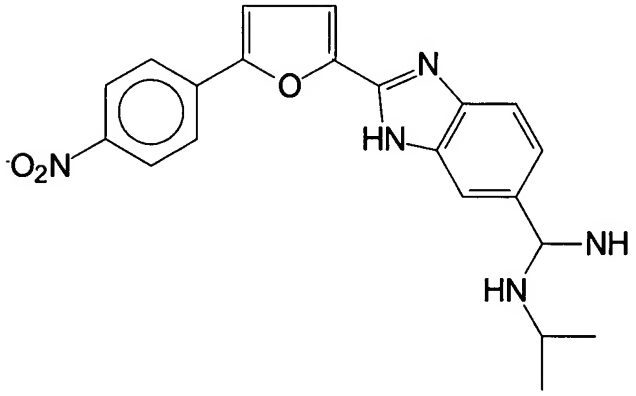
7. (Original) The compound according to Claim 1, wherein the compound is represented by the formula:



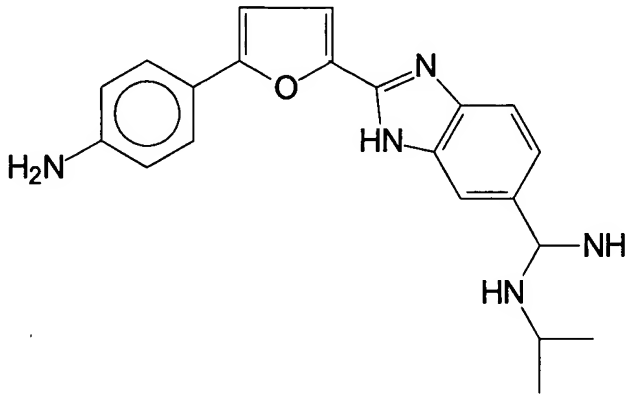
8. (Original) The compound according to Claim 1, wherein the compound is represented by the formula:



9. (Original) The compound according to Claim 1, wherein the compound is represented by the formula:



10. (Original) The compound according to Claim 1, wherein the compound is represented by the formula:

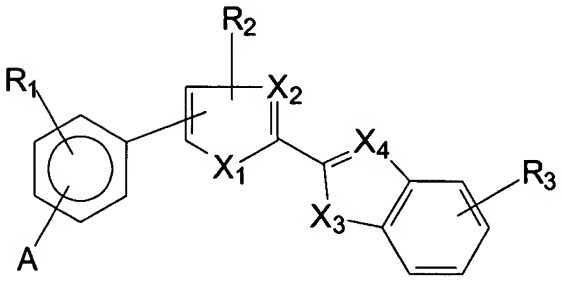


11. (Original) A pharmaceutical composition comprising a compound of Claim 1, in a pharmaceutically acceptable carrier.

12. (Original) The pharmaceutical composition according to Claim 11, wherein the composition is formulated for intravenous administration.

13. (Original) The pharmaceutical composition according to Claim 11, wherein the composition is formulated for oral administration.

14. (Original) A compound according to Formula II:



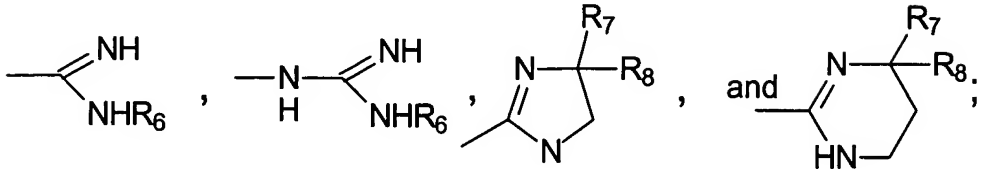
(II)

wherein:

X_1 and X_3 are each independently selected from the group consisting of O, S and NR_9, wherein R_9 is H or alkyl;

X_2 and X_4 are each independently CH or N;

A is selected from the group consisting of H, alkyl, aryl,



R_1, R_2, R_3, R_4 and R_5 are each independently selected from the group consisting of H, alkyl, alkoxy, halide, alkylhalide, amidine, nitro and amino groups;

R_6 is H, alkyl or aryl; and

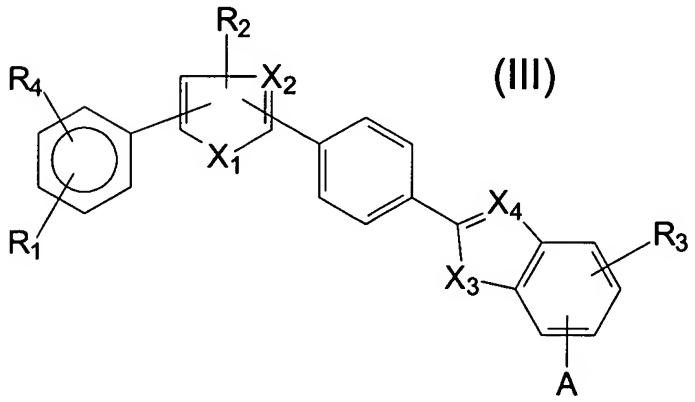
R_7 and R_8 are each independently selected from the group consisting of H and alkyl.

15. (Original) A pharmaceutical composition comprising a compound of Claim 14, in a pharmaceutically acceptable carrier.

16. (Original) The pharmaceutical composition according to Claim 15, wherein the composition is formulated for intravenous administration.

17. (Original) The pharmaceutical composition according to Claim 15, wherein the composition is formulated for oral administration.

18. (Original) A compound according to Formula III:



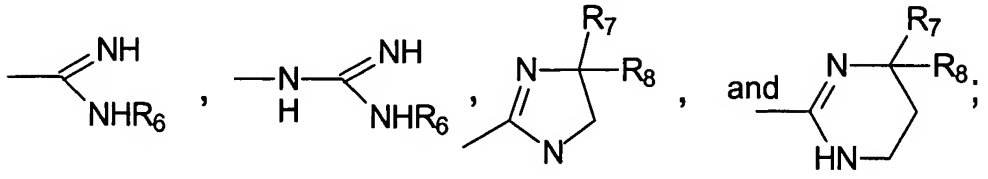
(III)

wherein:

X_1 and X_3 are each independently selected from the group consisting of O, S and NR_9, wherein R_9 is H or alkyl;

X_2 and X_4 are each independently CH or N;

A is selected from the group consisting of H, alkyl, aryl,



R_1, R_2, R_3, R_4 and R_5 are each independently selected from the group consisting of H, alkyl, alkoxy, halo, amidine, nitro and amino groups;

R_6 is H, alkyl or aryl; and

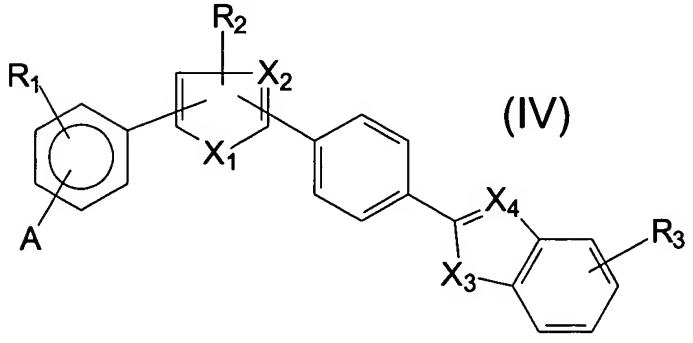
R_7 and R_8 are each independently selected from the group consisting of H and alkyl.

19. (Original) A pharmaceutical composition comprising a compound of Claim 18, in a pharmaceutically acceptable carrier.

20. (Original) The pharmaceutical composition according to Claim 19, wherein the composition is formulated for intravenous administration.

21. (Original) The pharmaceutical composition according to Claim 19, wherein the composition is formulated for oral administration.

22. (Original) A compound according to Formula IV:



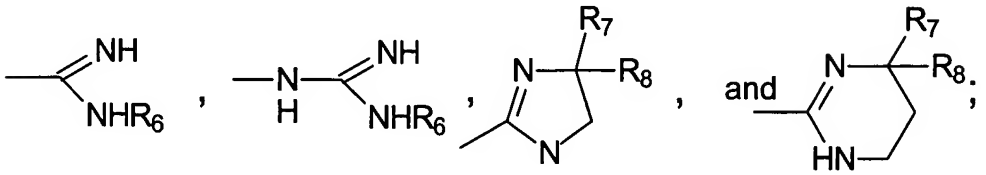
(IV)

wherein:

X_1 and X_3 are each independently selected from the group consisting of O, S and NR_9, wherein R_9 is H or alkyl;

X_2 and X_4 are each independently CH or N;

A is selected from the group consisting of H, alkyl, aryl,



R_1, R_2, R_3, R_4 and R_5 are each independently selected from the group consisting of H, alkyl, alkoxy, halide, alkylhalide, amidine, nitro and amino groups;

R_6 is H, alkyl or aryl; and

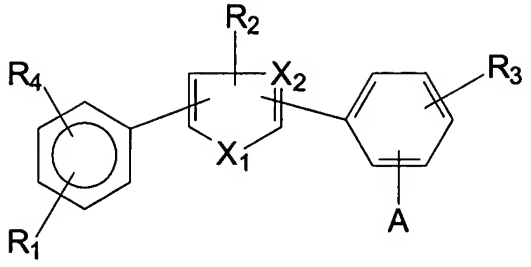
R_7 and R_8 are each independently selected from the group consisting of H and alkyl.

23. (Original) A pharmaceutical composition comprising a compound of Claim 22, in a pharmaceutically acceptable carrier.

24. (Original) The pharmaceutical composition according to Claim 23, wherein the composition is formulated for intravenous administration.

25. (Original) The pharmaceutical composition according to Claim 23, wherein the composition is formulated for oral administration.

26. (Original) A compound according to Formula V:



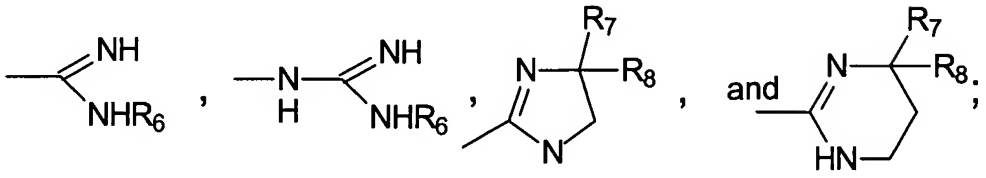
(V)

wherein:

X_1 is independently selected from the group consisting of O, S and NR_9, wherein R_9 is H or alkyl;

X_2 is CH or N;

A is selected from the group consisting of H, alkyl, aryl,



R_1, R_2, R_3, R_4 and R_5 are each independently selected from the group consisting of H, alkyl, alkoxy, halide, alkylhalide, amidine, nitro and amino groups;

R_6 is H, alkyl or aryl; and

R_7 and R_8 are each independently selected from the group consisting of H and alkyl.

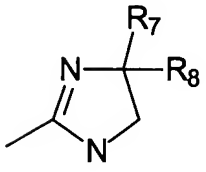
27. (Original) A compound according to Claim 26, wherein:

X_1 is O;

X_2 is C; and

R_2 and R_3 are each H.

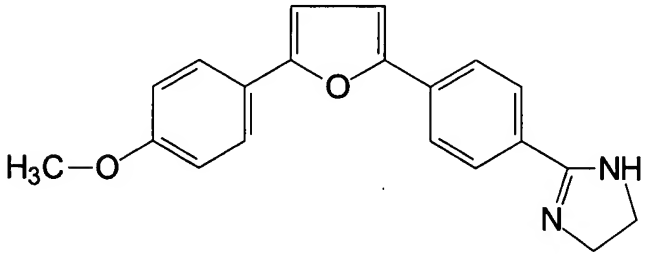
28. (Original) A compound according to Claim 26, wherein A is



and R_7 and R_8 are each H.

29. (Original) A compound according to Claim 26, wherein R_1 is alkoxy.

30. (Original) A compound according to Claim 26 , wherein the compound is represented by the formula:

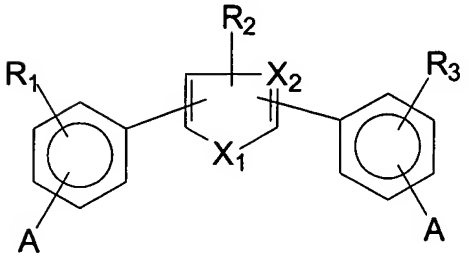


31. (Original) A pharmaceutical composition comprising a compound of Claim 30, in a pharmaceutically acceptable carrier.

32. (Original) The pharmaceutical composition according to Claim 31, wherein the composition is formulated for intravenous administration.

33. (Original) The pharmaceutical composition according to Claim 31, wherein the composition is formulated for oral administration.

34. (Original) A compound according to Formula VI:



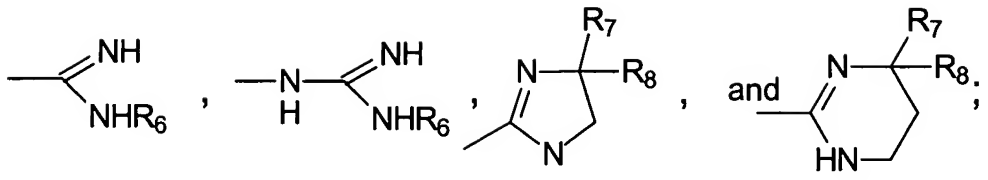
(VI)

wherein:

X_1 is selected from the group consisting of O, S and NR_9, wherein R_9 is H or alkyl;

X_2 is CH or N;

A is selected from the group consisting of H, alkyl, aryl,



R_1, R_2, R_3, R_4 and R_5 are each independently selected from the group consisting of H, alkyl, alkoxy, halide, alkylhalide, amidine, nitro and amino groups;

R_6 is H, alkyl or aryl; and

R_7 and R_8 are each independently selected from the group consisting of H and alkyl.

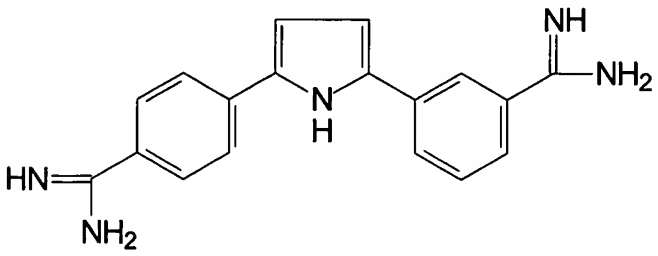
35. (Original) The compound according to Claim 34, wherein X_1 is O and X_2 is C.

36. (Original) The compound according to Claim 34, wherein X_1 is NH and X_2 is C.

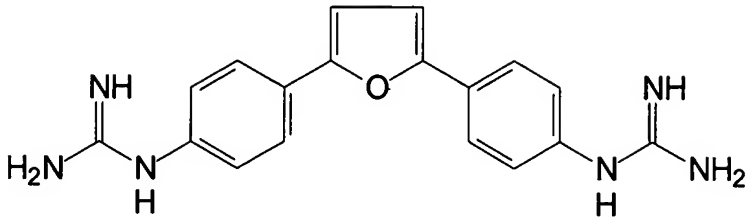
37. (Original) The compound according to Claim 34, wherein X_1 is S and X_2 is C.

38. (Original) The compound according to Claim 34, wherein X_1 is S and X_2 is N.

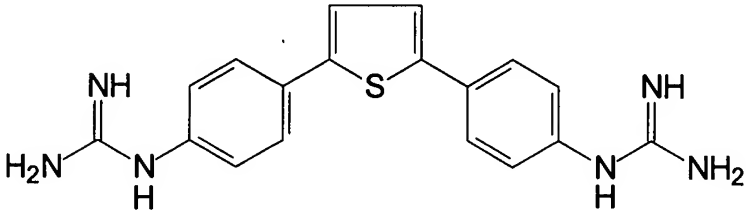
39. (Original) The compound according to Claim 34, wherein the compound is represented by the formula



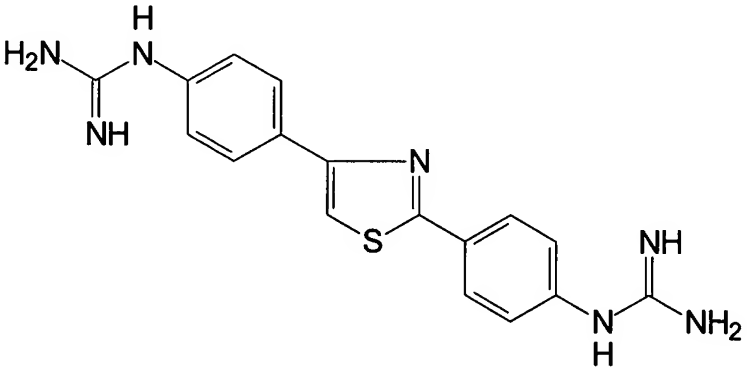
40. The compound according to Claim 34, wherein the compound is represented by the formula



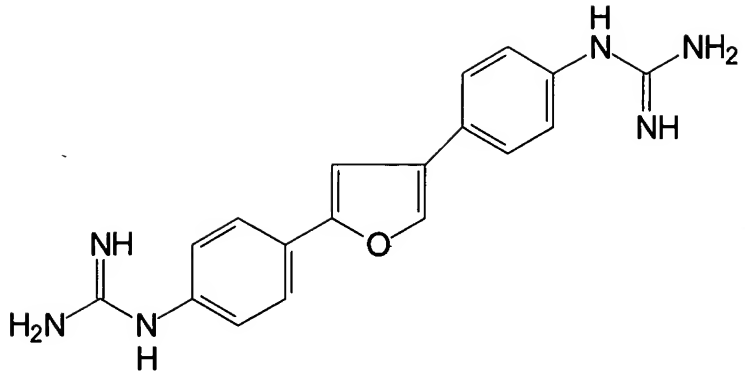
41. (Original) The compound according to Claim 34, wherein the compound is represented by the formula



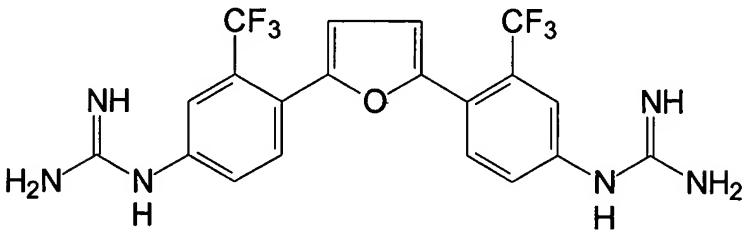
42. (Original) The compound according to Claim 34, wherein the compound is represented by the formula



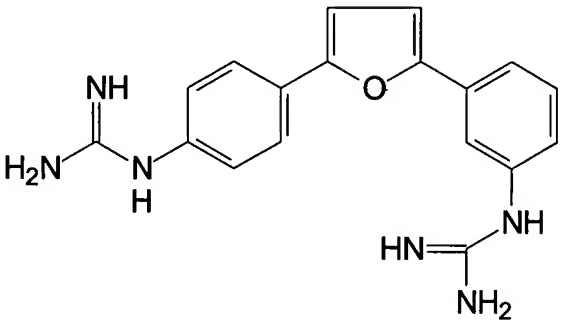
43. (Original) The compound according to Claim 34, wherein the compound is represented by the formula



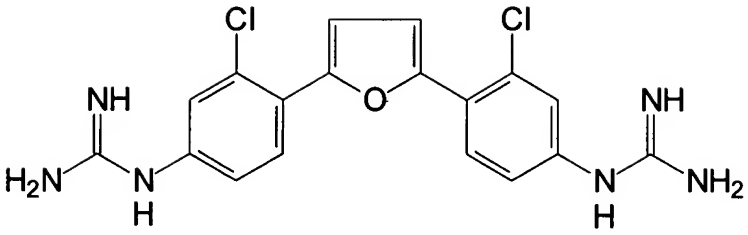
44. (Original) The compound according to Claim 34, wherein the compound is represented by the formula



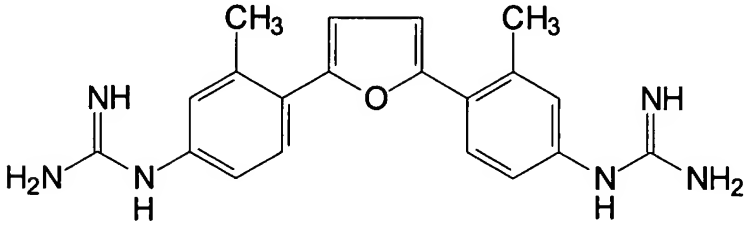
45. (Original) The compound according to Claim 34, wherein the compound is represented by the formula



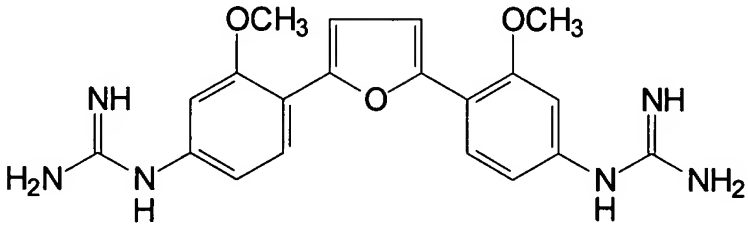
46. (Original) The compound according to Claim 34, wherein the compound is represented by the formula



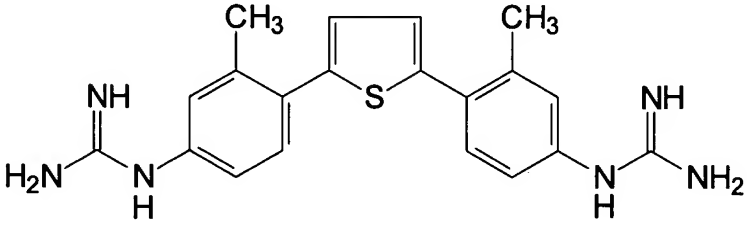
47. (Original) The compound according to Claim 34, wherein the compound is represented by the formula



48. (Original) The compound according to Claim 34, wherein the compound is represented by the formula



49. (Original) The compound according to Claim 34, wherein the compound is represented by the formula

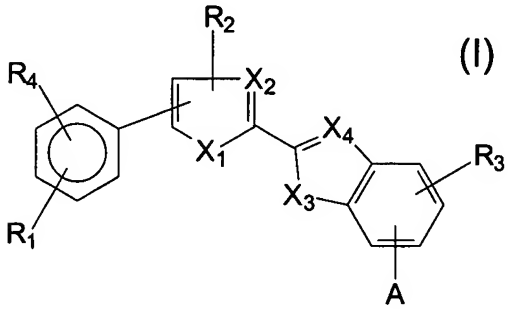


50. (Original) A pharmaceutical composition comprising a compound of Claim 34, in a pharmaceutically acceptable carrier.

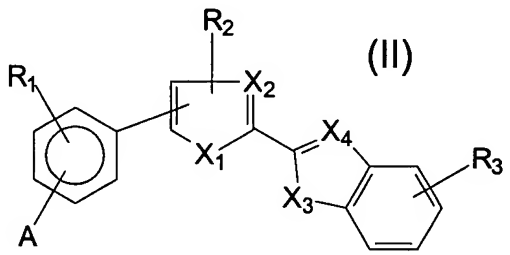
51. (Original) The pharmaceutical composition according to Claim 50, wherein the composition is formulated for intravenous administration.

52. (Original) The pharmaceutical composition according to Claim 50, wherein the composition is formulated for oral administration.

53. (Original) A method of treating bovine viral diarrhea virus (BVDV) infection in a subject in need of such treatment, comprising administering to the subject a compound selected from the group consisting of Formula I and Formula II:



(I)



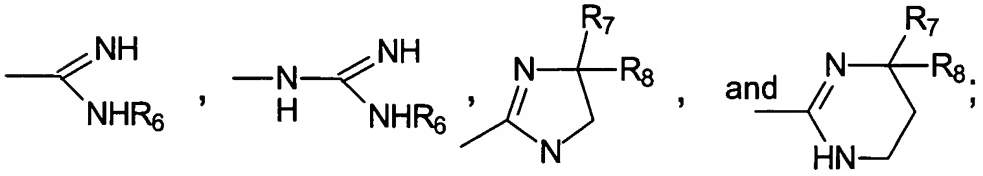
(II)

wherein:

X_1 and X_3 are each independently selected from the group consisting of O, S and NR_9, wherein R_9 is H or alkyl;

X_2 and X_4 are each independently CH or N;

A is selected from the group consisting of H, alkyl, aryl,



R_1, R_2, R_3, R_4 and R_5 are each independently selected from the group consisting of H, alkyl, alkoxy, halide, alkylhalide, amidine, nitro and amino groups;

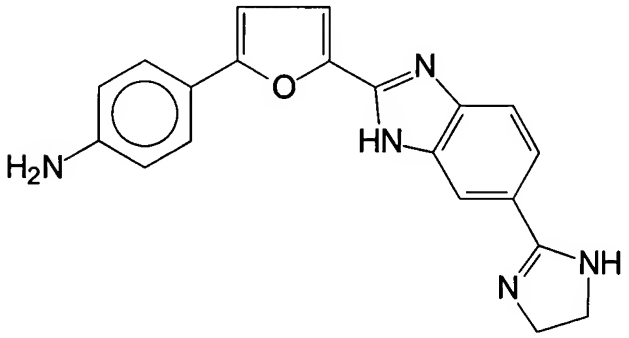
R_6 is H, alkyl or aryl; and

R_7 and R_8 are each independently selected from the group consisting of H and alkyl;

or a pharmaceutically acceptable salt thereof, in an amount sufficient to treat the bovine viral diarrhea virus (BVDV) infection.

54. (Original) The method according to Claim 53, wherein the compound is a compound of Formula I.

55. (Original) The method according to Claim 53, wherein the compound is represented by the formula:



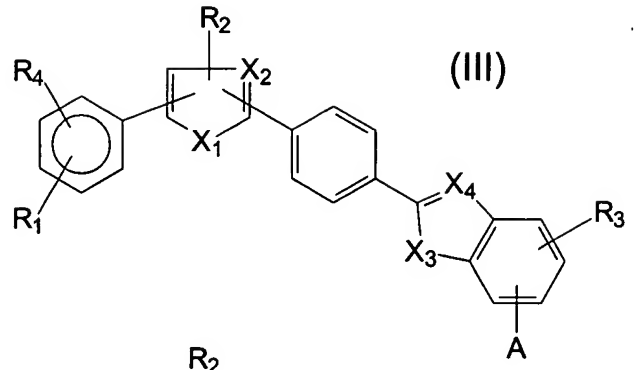
56. (Original) The method according to Claim 53, wherein the subject is a cow.

57. (Original) The method according to Claim 53, wherein the subject is an embryo.

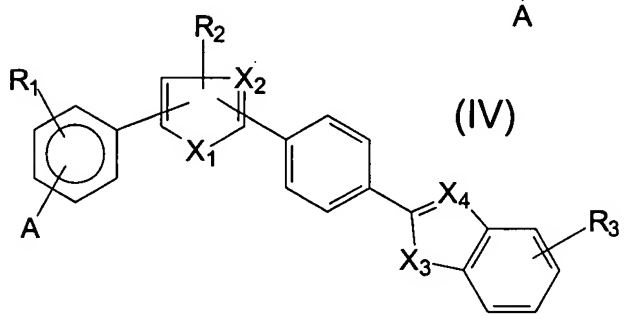
58. (Original) The method according to Claim 53, wherein the compound is administered intravenously.

59. (Original) The method according to Claim 53, wherein the compound is administered orally.

60. (Original) A method of treating bovine viral diarrhea virus (BVDV) infection in a subject in need of such treatment, comprising administering to the subject a compound selected from the group consisting of Formula III and Formula IV:



(III)



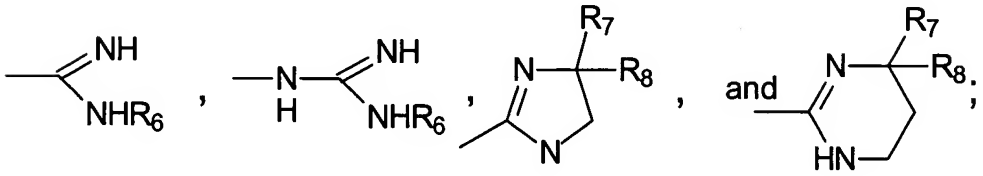
(IV)

wherein:

X_1 and X_3 are each independently selected from the group consisting of O, S and NR_9, wherein R_9 is H or alkyl;

X_2 and X_4 are each independently CH or N;

A is selected from the group consisting of H, alkyl, aryl,



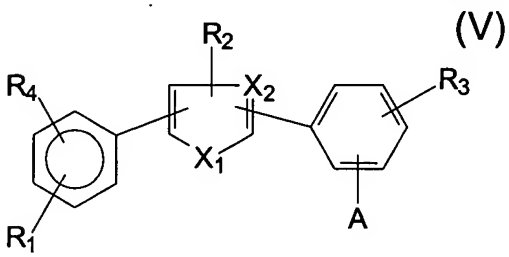
R_1, R_2, R_3, R_4 and R_5 are each independently selected from the group consisting of H, alkyl, alkoxy, halide, alkylhalide, amidine, nitro and amino groups;

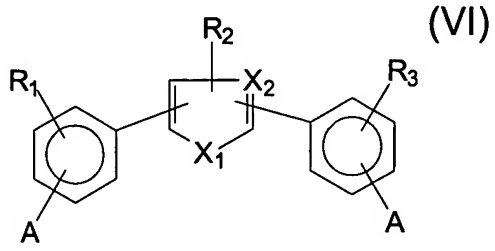
R_6 is H, alkyl or aryl; and

R_7 and R_8 are each independently selected from the group consisting of H and alkyl;

or a pharmaceutically acceptable salt thereof, in an amount sufficient to treat the bovine viral diarrhea virus (BVDV) infection.

61. (Original) A method of treating bovine viral diarrhea virus (BVDV) infection in a subject in need of such treatment, comprising administering to the subject a compound selected from the group consisting of Formula V and Formula VI:



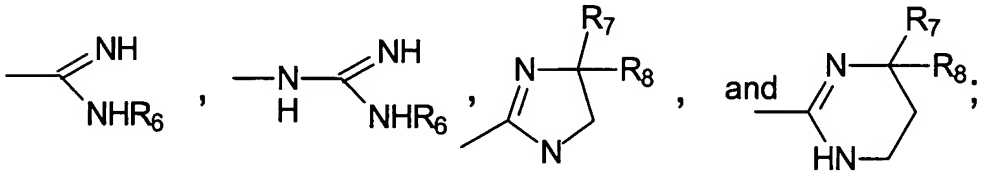


wherein:

X_1 and X_3 are each independently selected from the group consisting of O, S and NR_9, wherein R_9 is H or alkyl;

X_2 and X_4 are each independently CH or N;

A is selected from the group consisting of H, alkyl, aryl,



R_1, R_2, R_3, R_4 and R_5 are each independently selected from the group consisting of H, alkyl, alkoxy, halide, alkylhalide, amidine, nitro and amino groups;

R_6 is H, alkyl or aryl; and

R_7 and R_8 are each independently selected from the group consisting of H and alkyl;

or a pharmaceutically acceptable salt thereof, in an amount sufficient to treat the bovine viral diarrhea virus (BVDV) infection.

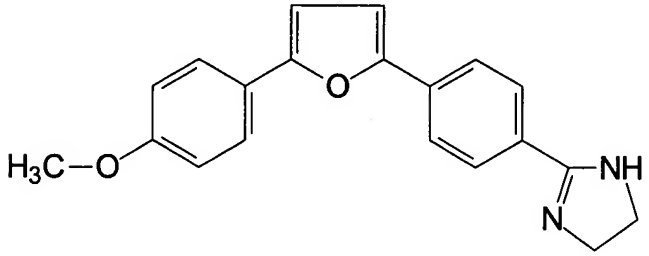
62. (Original) The method according to Claim 61, wherein the subject is a cow.

63. (Original) The method according to Claim 61, wherein the subject is an embryo.

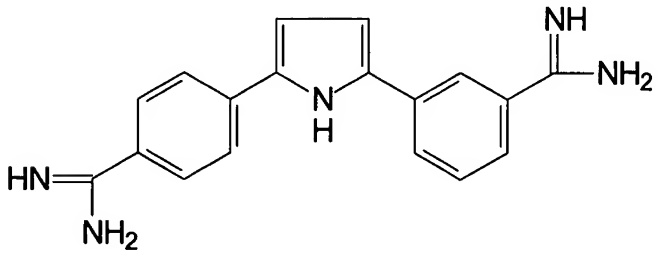
64. (Original) The method according to Claim 61, wherein the compound is administered intravenously.

65. (Original) The method according to Claim 61, wherein the compound is administered orally.

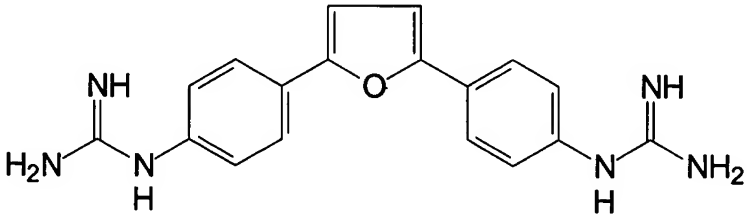
66. (Original) The method according to Claim 61, wherein the compound is represented by the formula:



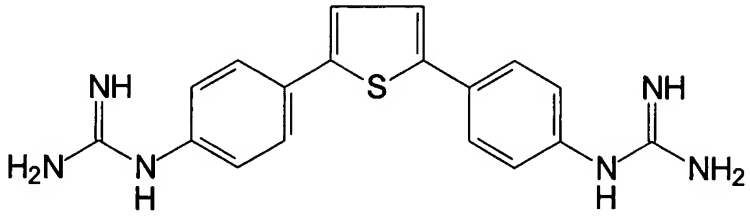
67. (Original) The method according to Claim 61, wherein the compound is represented by the formula



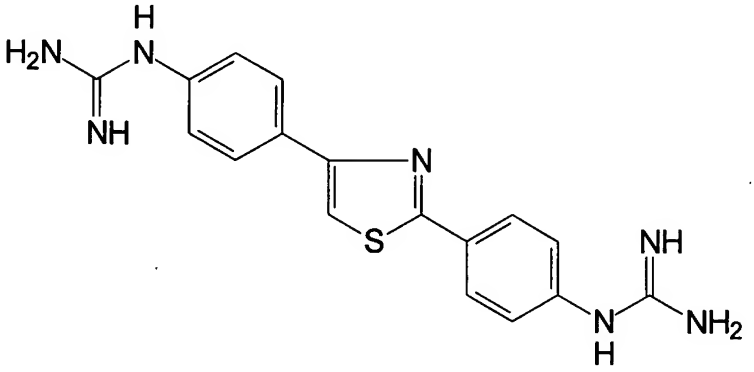
68. (Original) The method according to Claim 61, wherein the compound is represented by the formula



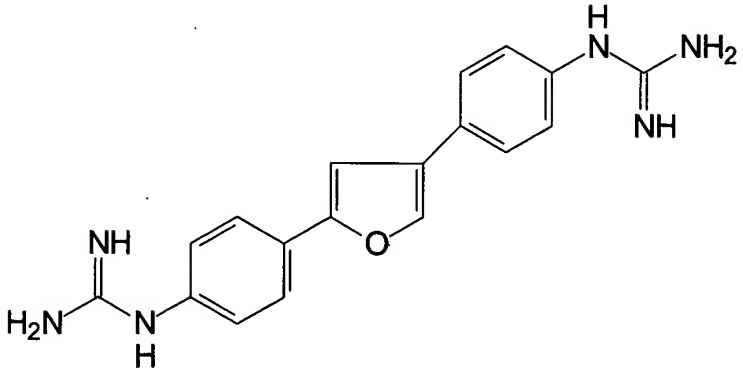
69. (Original) The method according to Claim 61, wherein the compound is represented by the formula



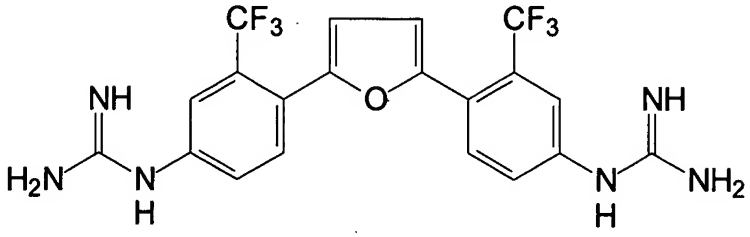
70. (Original) The method according to Claim 61, wherein the compound is represented by the formula



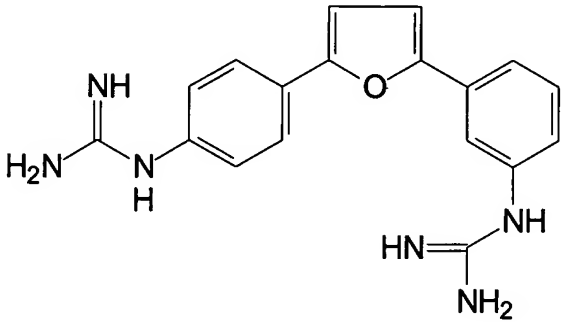
71. (Original) The method according to Claim 61, wherein the compound is represented by the formula



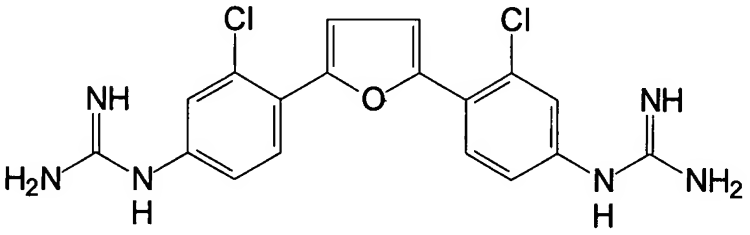
72. (Original) The method according to Claim 61, wherein the compound is represented by the formula



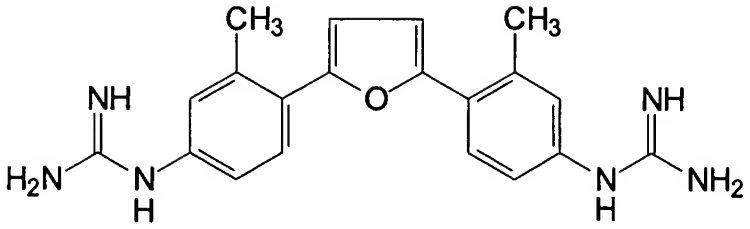
73. (Original) The method according to Claim 61, wherein the compound is represented by the formula



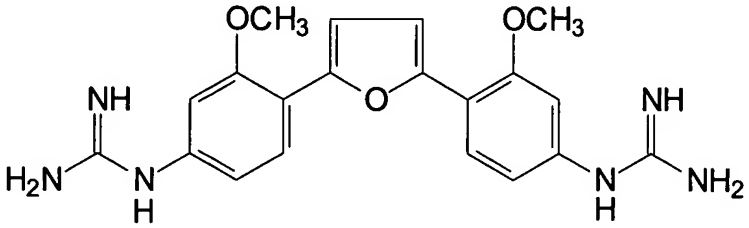
74. (Original) The method according to Claim 61, wherein the compound is represented by the formula



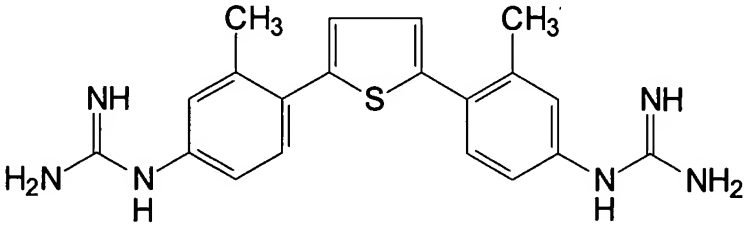
75. (Original) The method according to Claim 61, wherein the compound is represented by the formula



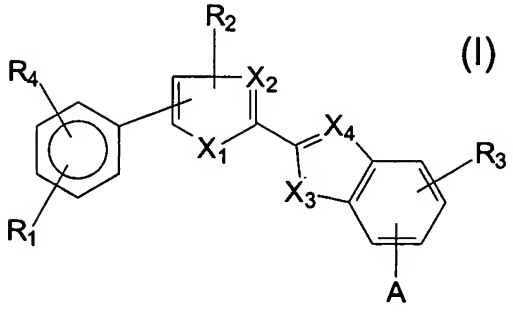
76. (Original) The method according to Claim 61, wherein the compound is represented by the formula



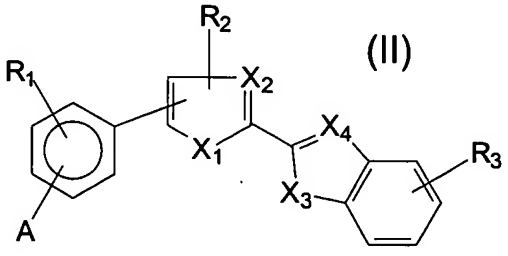
77. (Original) The method according to Claim 61, wherein the compound is represented by the formula



78. (Original) A method of treating hepatitis C infection in a subject in need of such treatment, comprising administering to the subject a compound selected from the group consisting of Formula I and Formula II:



(I)



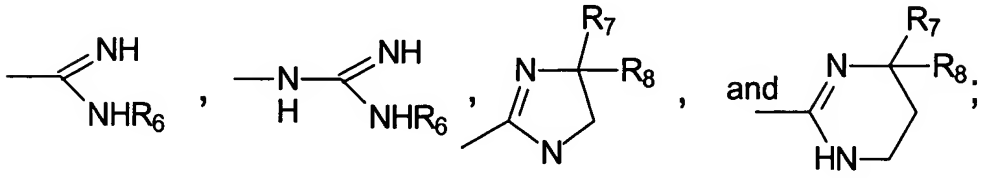
(II)

wherein:

X_1 and X_3 are each independently selected from the group consisting of O, S and NR_9, wherein R_9 is H or alkyl;

X_2 and X_4 are each independently CH or N;

A is selected from the group consisting of H, alkyl, aryl,



R_1, R_2, R_3, R_4 and R_5 are each independently selected from the group consisting of H, alkyl, alkoxy, halide, alkylhalide, amidine, nitro and amino groups;

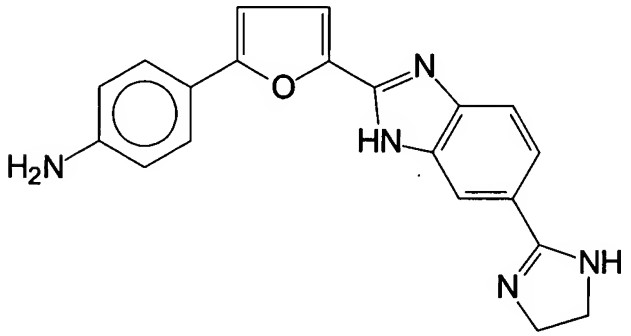
R_6 is H, alkyl or aryl; and

R_7 and R_8 are each independently selected from the group consisting of H and alkyl;

or a pharmaceutically acceptable salt thereof, in an amount sufficient to treat the hepatitis C infection.

79. (Original) The method according to Claim 78, wherein the compound is a compound of Formula I.

80. (Original) The method according to Claim 78, wherein the compound is represented by the formula:

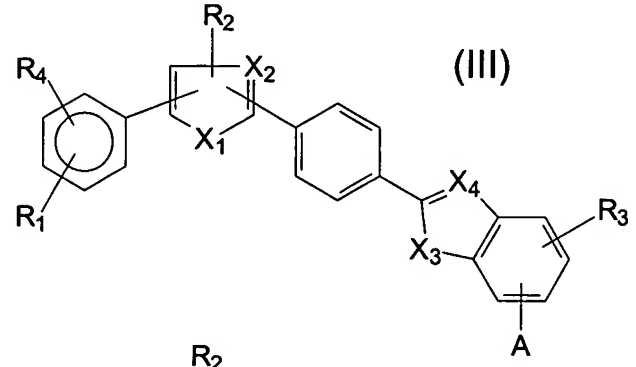


81. (Original) The method according to Claim 78, wherein the subject is a human.

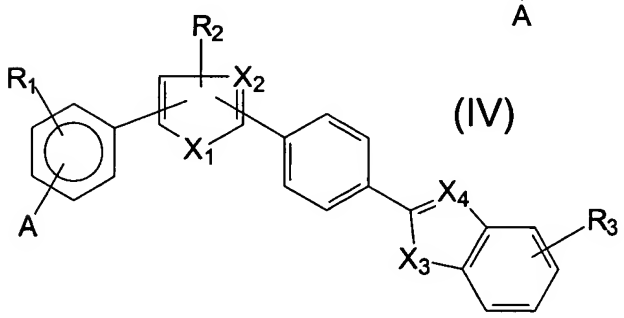
82. (Original) The method according to Claim 78, wherein the compound is administered intravenously.

83. (Original) The method according to Claim 78, wherein the compound is administered orally.

84. (Original) A method of treating hepatitis C infection in a subject in need of such treatment, comprising administering to the subject a compound selected from the group consisting of Formula III and Formula IV:



(III)



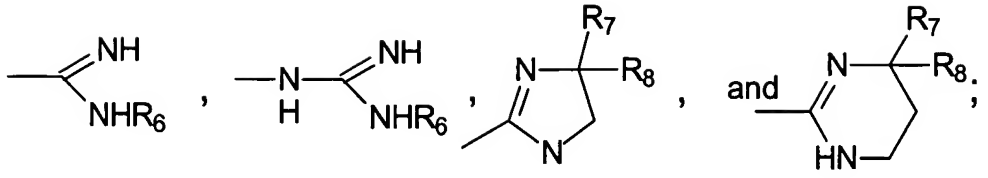
(IV)

wherein:

X_1 and X_3 are each independently selected from the group consisting of O, S and NR_9, wherein R_9 is H or alkyl;

X_2 and X_4 are each independently CH or N;

A is selected from the group consisting of H, alkyl, aryl,



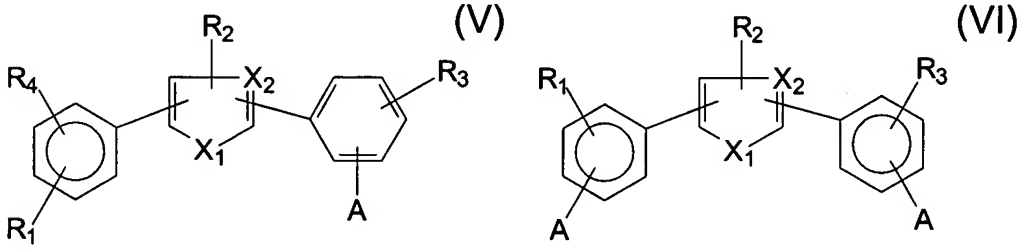
R_1, R_2, R_3, R_4 and R_5 are each independently selected from the group consisting of H, alkyl, alkoxy, halide, alkylhalide, amidine, nitro and amino groups;

R_6 is H, alkyl or aryl; and

R_7 and R_8 are each independently selected from the group consisting of H and alkyl;

or a pharmaceutically acceptable salt thereof, in an amount sufficient to treat the hepatitis C infection.

85. (Original) A method of treating hepatitis C infection in a subject in need of such treatment, comprising administering to the subject a compound selected from the group consisting of Formula V and Formula VI:

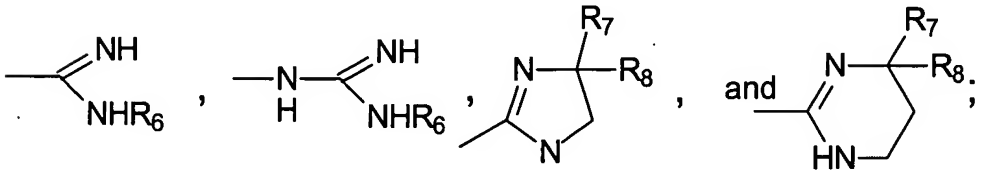


wherein:

X_1 and X_3 are each independently selected from the group consisting of O, S and NR_9, wherein R_9 is H or alkyl;

X_2 and X_4 are each independently CH or N;

A is selected from the group consisting of H, alkyl, aryl,



R_1, R_2, R_3, R_4 and R_5 are each independently selected from the group consisting of H, alkyl, alkoxy, halide, alkylhalide, amidine, nitro and amino groups;

R_6 is H, alkyl or aryl; and

R_7 and R_8 are each independently selected from the group consisting of H and alkyl;

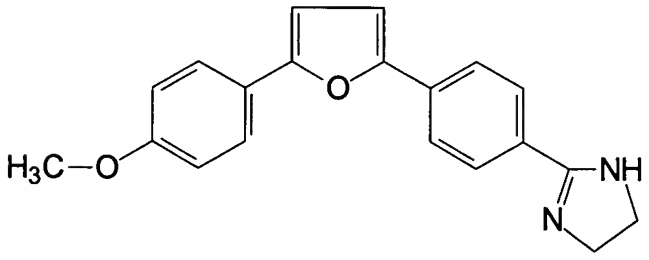
or a pharmaceutically acceptable salt thereof, in an amount sufficient to treat the hepatitis C infection.

86. (Original) The method according to Claim 85, wherein the subject is a human.

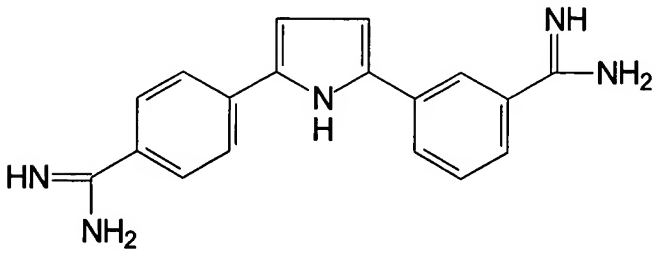
87. (Original) The method according to Claim 85, wherein the compound is administered intravenously.

88. (Original) The method according to Claim 85, wherein the compound is administered orally.

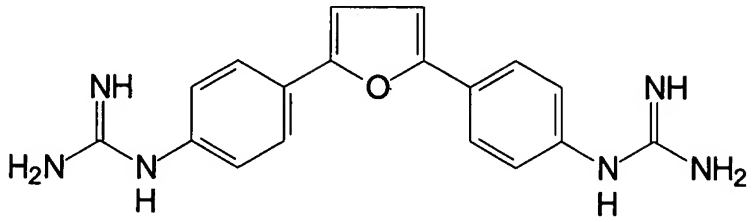
89. (Original) The method according to Claim 85, wherein the compound is represented by the formula:



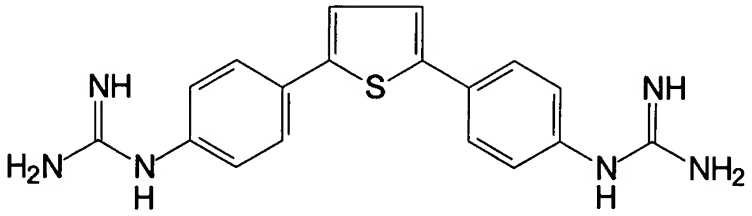
90. (Original) The method according to Claim 85, wherein the compound is represented by the formula



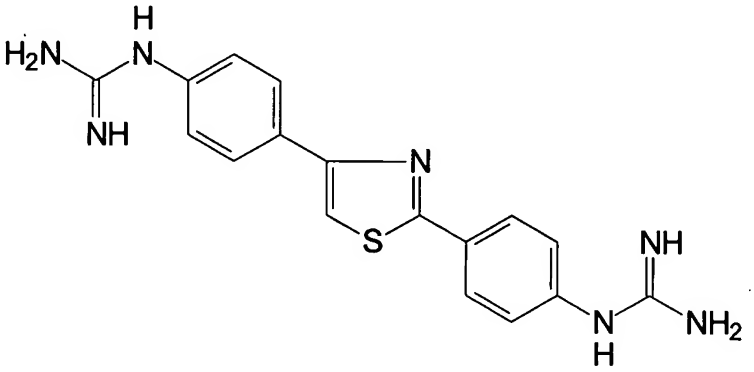
91. (Original) The method according to Claim 85, wherein the compound is represented by the formula



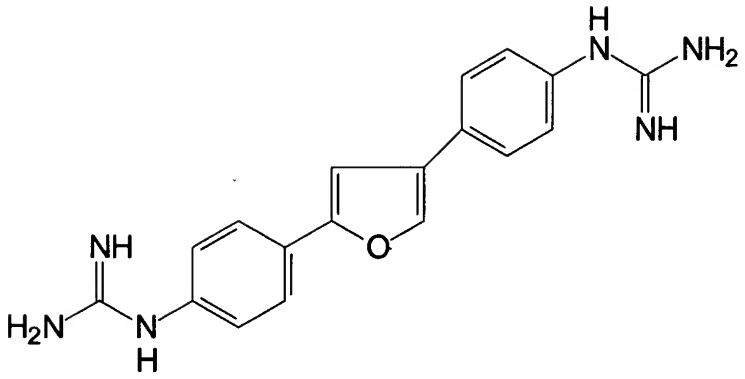
92. (Original) The method according to Claim 85, wherein the compound is represented by the formula



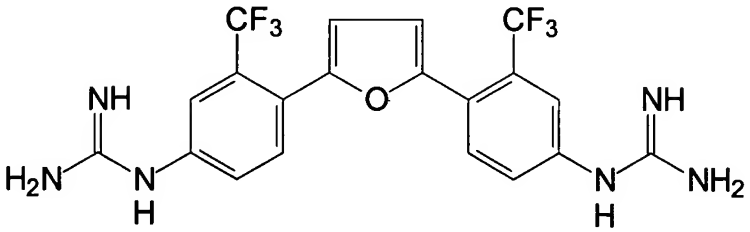
93. (Original) The method according to Claim 85, wherein the compound is represented by the formula



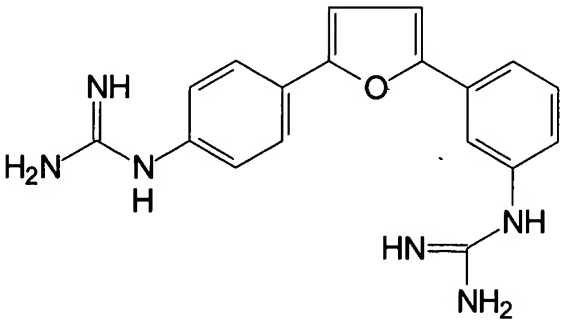
94. (Original) The method according to Claim 85, wherein the compound is represented by the formula



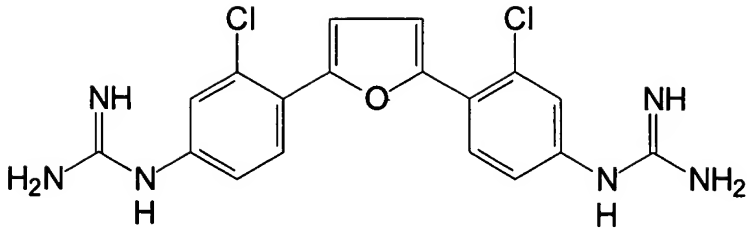
95. (Original) The method according to Claim 85, wherein the compound is represented by the formula



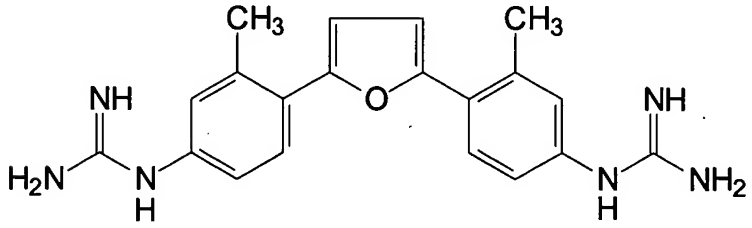
96. (Original) The method according to Claim 85, wherein the compound is represented by the formula



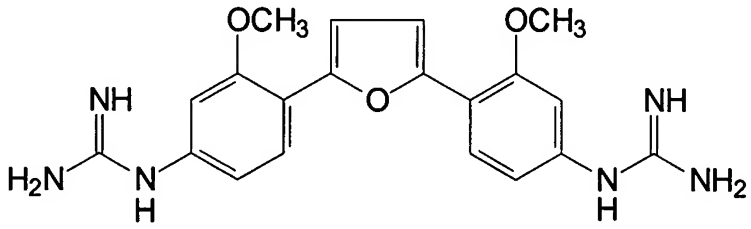
97. (Original) The method according to Claim 85, wherein the compound is represented by the formula



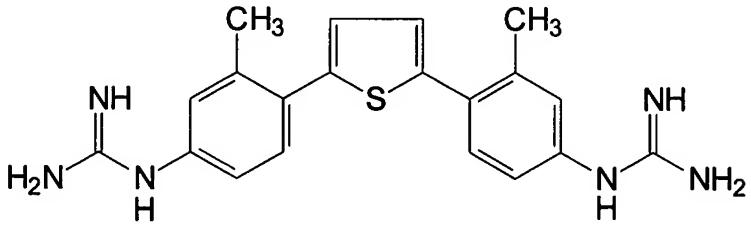
98. (Original) The method according to Claim 85, wherein the compound is represented by the formula



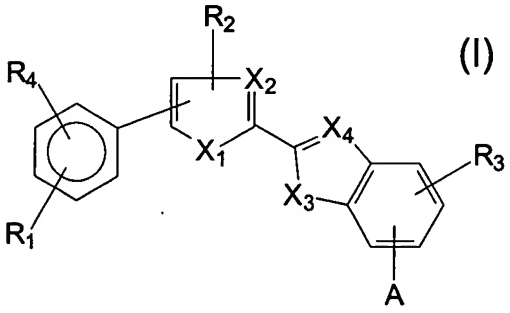
99. (Original) The method according to Claim 85, wherein the compound is represented by the formula



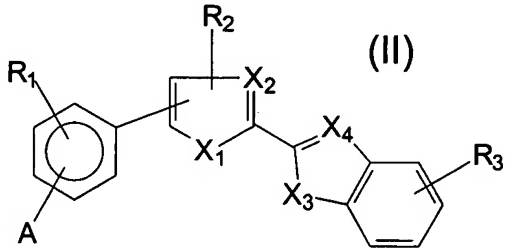
100. (Original) The method according to Claim 85, wherein the compound is represented by the formula



101. (Original) A method of treating a member of the *Flaviviridae* family of viruses in a subject in need of such treatment, comprising administering to the subject a compound selected from the group consisting of Formula I and Formula II:



(I)



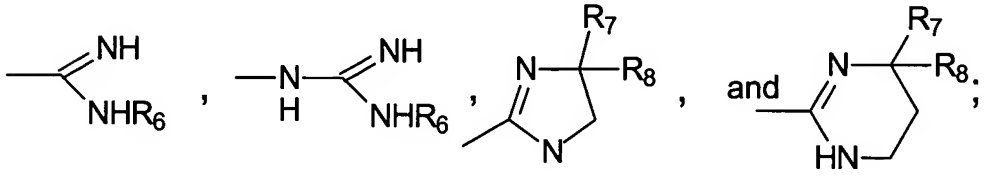
(II)

wherein:

X_1 and X_3 are each independently selected from the group consisting of O, S and NR_9, wherein R_9 is H or alkyl;

X_2 and X_4 are each independently CH or N;

A is selected from the group consisting of H, alkyl, aryl,



;

R_1, R_2, R_3, R_4 and R_5 are each independently selected from the group consisting of H, alkyl, alkoxy, halide, alkylhalide, amidine, nitro and amino groups;

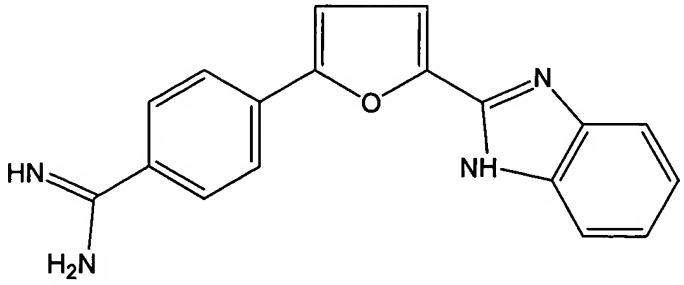
R_6 is H, alkyl or aryl; and

R_7 and R_8 are each independently selected from the group consisting of H and alkyl;

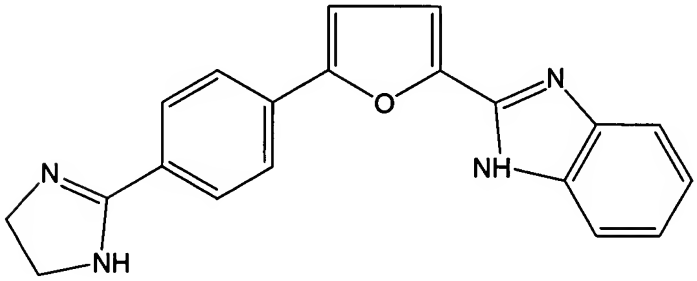
or a pharmaceutically acceptable salt thereof, in an amount sufficient to treat the bovine viral diarrhea virus (BVDV) infection.

102. (Original) The method according to Claim 101, wherein the compound is a compound of Formula II.

103. (Original) The method according to Claim 101, wherein the compound is represented by the formula:



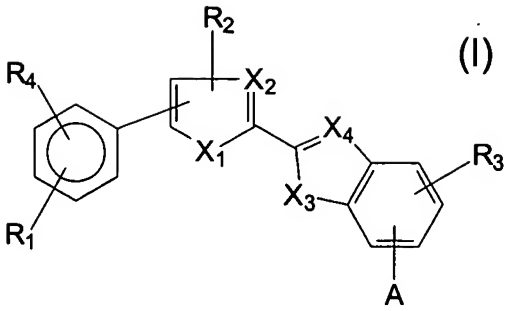
104. (Original) The method according to Claim 101, wherein the compound is represented by the formula:



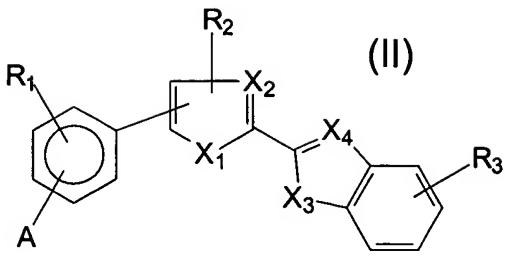
105. (Original) The method according to Claim 101, wherein the compound is administered intravenously.

106. (Original) The method according to Claim 101, wherein the compound is administered orally.

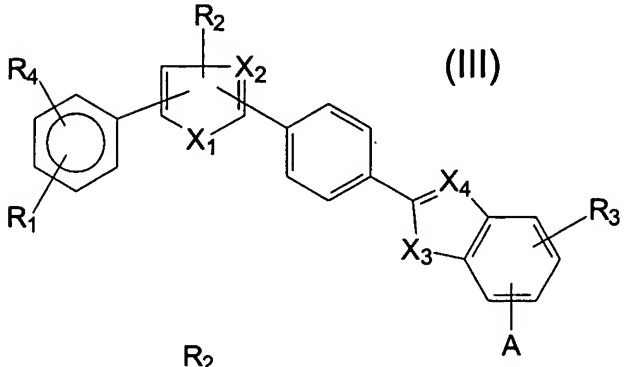
107. (New) A method of treating a culture for bovine viral diarrhea virus (BVDV) infection, comprising administering to the culture a compound selected from the group consisting of Formula (I)-Formula (VI):



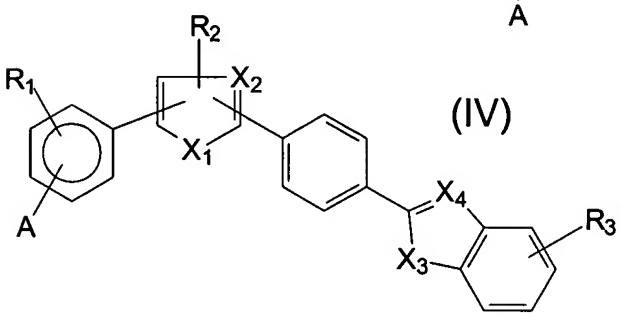
(I)



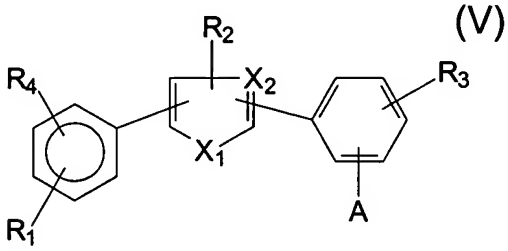
(II)



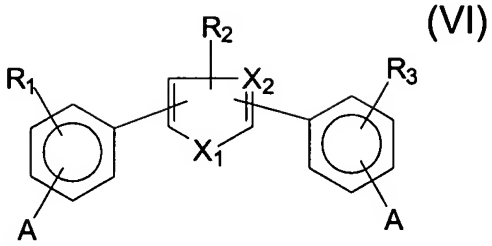
(III)



(IV)



(V)



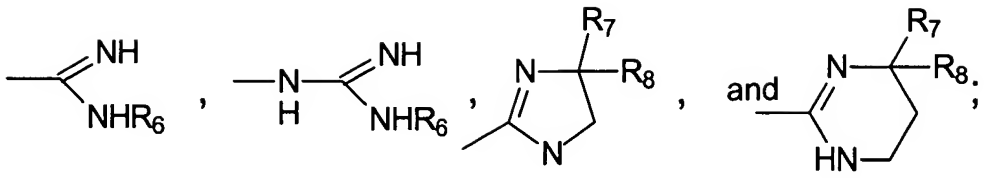
(VI)

wherein:

X_1 and X_3 are each independently selected from the group consisting of O, S and NR_9, wherein R_9 is H or alkyl;

X_2 and X_4 are each independently CH or N;

A is selected from the group consisting of H, alkyl, aryl,



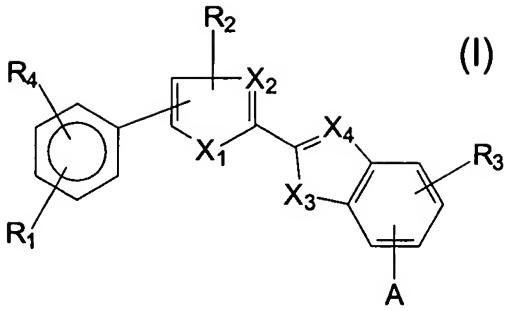
R_1, R_2, R_3, R_4 and R_5 are each independently selected from the group consisting of H, alkyl, alkoxy, amidine, halide, alkylhalide, nitro and amino groups;

R_6 is H, alkyl or aryl; and

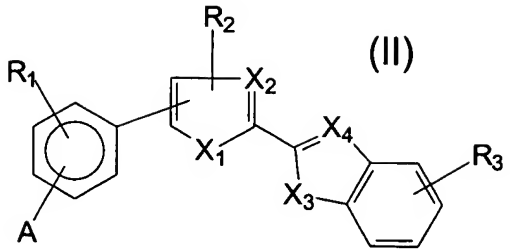
R_7 and R_8 are each independently selected from the group consisting of H and alkyl; or a pharmaceutically acceptable salt thereof, in an amount sufficient to treat the BVDV infection.

108. (New) The method of Claim 107, wherein the culture is selected from one of a cell culture and a tissue culture.

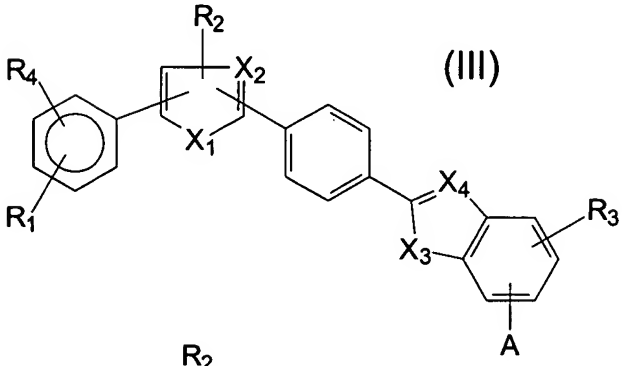
109. (New) A method of treating an embryo for bovine viral diarrhea virus (BVDV) infection, comprising administering to the embryo a compound selected from the group consisting of Formula (I)-Formula (VI):



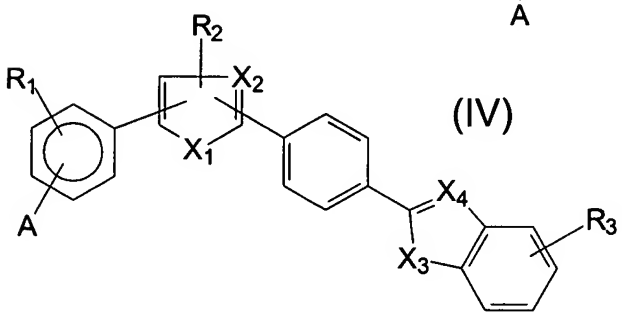
(I)



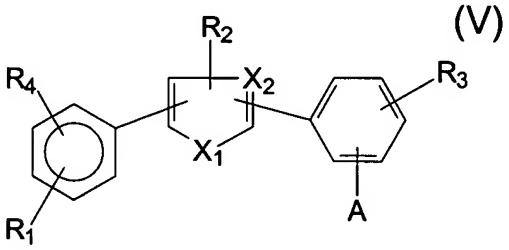
(II)



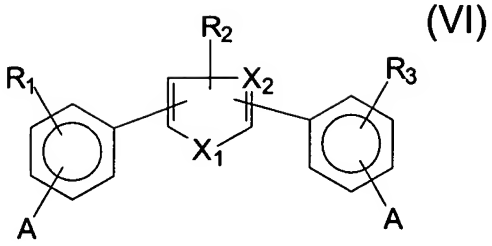
(III)



(IV)



(V)



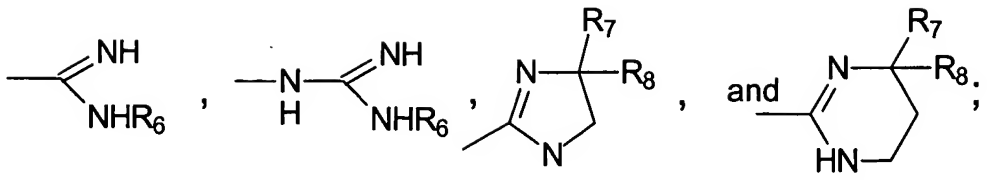
(VI)

wherein:

X_1 and X_3 are each independently selected from the group consisting of O, S and NR_9, wherein R_9 is H or alkyl;

X_2 and X_4 are each independently CH or N;

A is selected from the group consisting of H, alkyl, aryl,



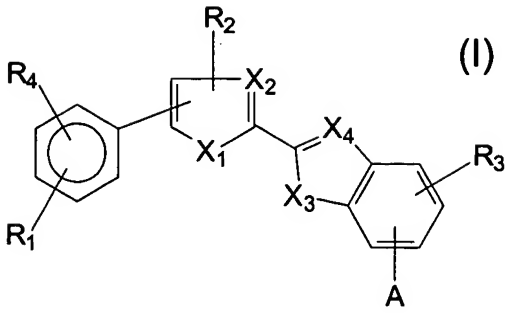
R_1, R_2, R_3, R_4 and R_5 are each independently selected from the group consisting of H, alkyl, alkoxy, amidine, halide, alkylhalide, nitro and amino groups;

R_6 is H, alkyl or aryl; and

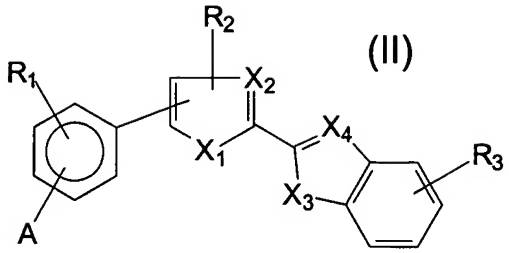
R_7 and R_8 are each independently selected from the group consisting of H and alkyl; or a pharmaceutically acceptable salt thereof, in an amount sufficient to treat the BVDV infection.

110. (New) The method of Claim 109, wherein the embryo comprises an *in vitro*-produced embryo.

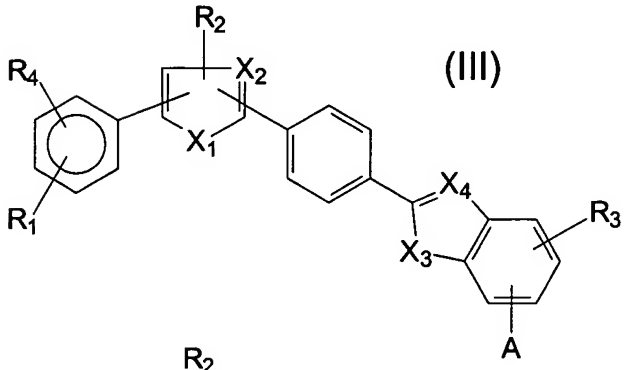
111. (New) A method of treating bovine viral diarrhea virus (BVDV) in a culture medium surrounding an *in vitro*-produced embryo, comprising administering to the culture medium a compound selected from the group consisting of Formula (I)-Formula (VI):



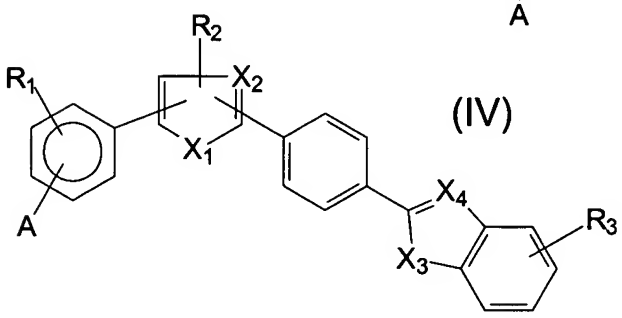
(I)



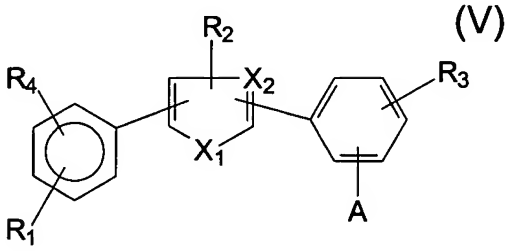
(II)



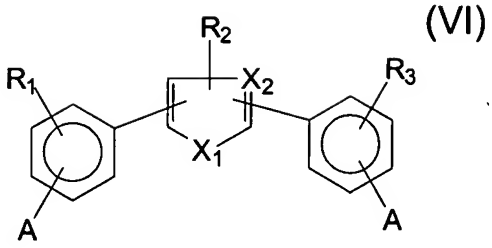
(III)



(IV)



(V)



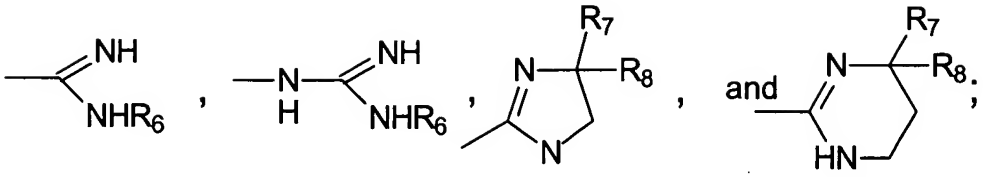
(VI)

wherein:

X_1 and X_3 are each independently selected from the group consisting of O, S and NR_9, wherein R_9 is H or alkyl;

X_2 and X_4 are each independently CH or N;

A is selected from the group consisting of H, alkyl, aryl,



R_1, R_2, R_3, R_4 and R_5 are each independently selected from the group consisting of H, alkyl, alkoxy, amidine, halide, alkylhalide, nitro and amino groups;

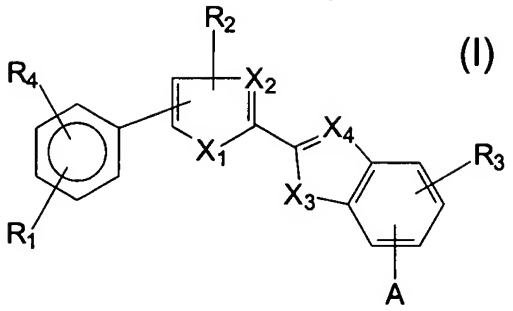
R_6 is H, alkyl or aryl; and

R_7 and R_8 are each independently selected from the group consisting of H and alkyl; or a pharmaceutically acceptable salt thereof, in an amount sufficient to treat the BVDV.

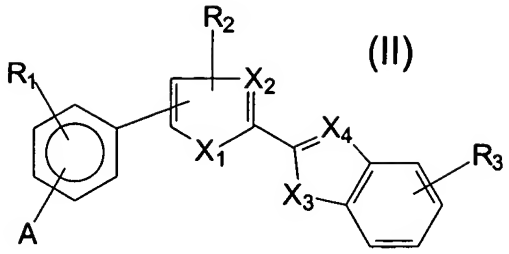
112. (New) A method of preparing a biological specimen or medium for use in an *in vitro* fertilization procedure, the method comprising:

(a) providing the biological specimen or medium; and

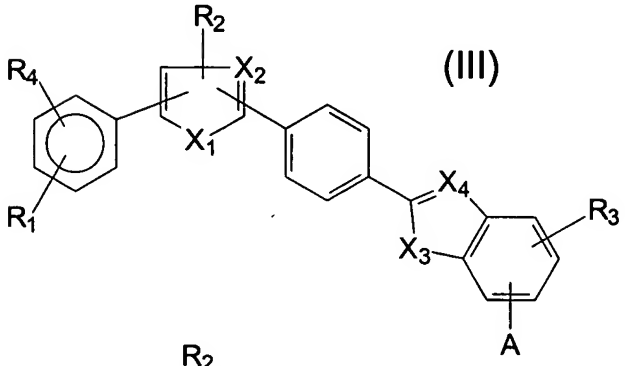
(b) administering to the biological specimen or medium a compound selected from the group consisting of Formula (I)-Formula (VI):



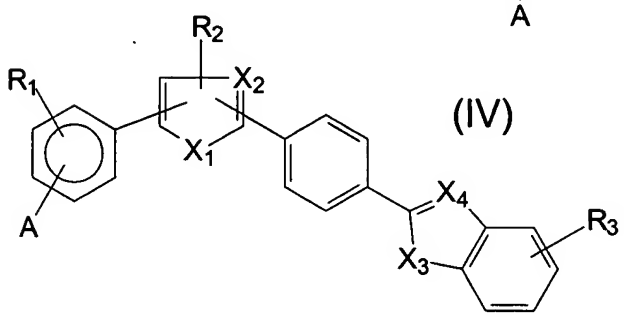
(I)



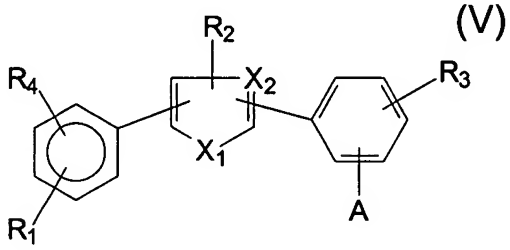
(II)



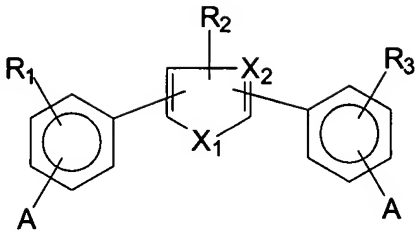
(III)



(IV)



(V)



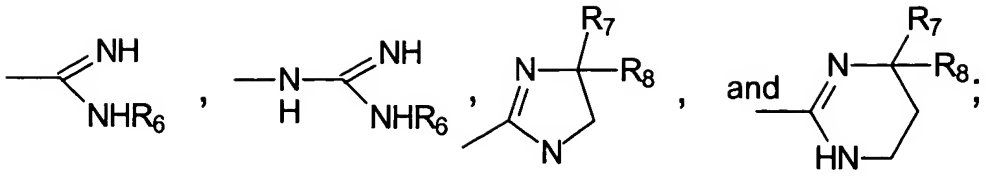
(VI)

wherein:

X_1 and X_3 are each independently selected from the group consisting of O, S and NR_9, wherein R_9 is H or alkyl;

X_2 and X_4 are each independently CH or N;

A is selected from the group consisting of H, alkyl, aryl,



R_1, R_2, R_3, R_4 and R_5 are each independently selected from the group consisting of H, alkyl, alkoxy, amidine, halide, alkylhalide, nitro and amino groups;

R_6 is H, alkyl or aryl; and

R_7 and R_8 are each independently selected from the group consisting of H and alkyl; or a pharmaceutically acceptable salt thereof, in an amount sufficient to treat the biological specimen or medium for a BVDV infection.

113. (New) The method of Claim 112, wherein the biological specimen or medium comprises a gamete, a serum, a somatic cell, an oocyte, a cumulus oocyte complex (COC), an embryo, a culture medium surrounding an embryo, and combinations thereof.